

## Amendments to the Claims:

Sub 1  
1. (Currently Amended) A composition for accelerating *in vivo* oxidation of ~~alcohol ethanol~~, the composition comprising (i) NAD<sup>+</sup> and at least one of a species selected from a group including at least one of a multivalent transition metal ion; and a complex thereof, the species being in a state selected to accelerate *in vivo* oxidation of alcohol in the absence of a dehydrogenase and NAD<sup>+</sup>.

2. (Original) The composition of Claim 1, the transition metal ion being selected from a group including the elements of Groups IVa through VIII of the Periodic Table.

As 3  
3. (Currently Amended) The composition of Claim 1, the species comprising one of a group selected from: vanadyl sulfate; potassium ferricyanide; ammonium iron (III) citrate; ammonium molybdate; ammonium phospho molybdate; sodium tungstate; sodium phospho tungstate; ammonium manganese (III) sulfate; zirconium (IV EDTA); niobium (IV) EDTA; tetrakis(tropolinato) niobium (V) chloride; tetrakis(tropolinato) tantalum (V) chloride; cobalt (III) hexamine chloride; and chromium (III) picolinate.

4. (Original) The composition of Claim 1 having a sufficient quantity of the transition metal ion to provide an *in vivo* concentration of the ion in the range 0.05% to 2% of a maximum *in vivo* molar concentration of ethanol.

5. (Original) The composition of Claim 1 having a quantity of NAD<sup>+</sup> sufficient to provide an *in vivo* concentration of NAD<sup>+</sup> in the range 0.05% to 5% of a maximum *in vivo* molar concentration of ethanol.

Sub 6  
6. (Original) The composition of Claim 1 comprising also a base.

7. (Original) The composition of Claim 6, having a quantity of the base sufficient to provide an *in vivo* concentration of the base at least chemically equivalent to acid resulting from the oxidation of the ethanol.

Sub 8  
8. (Original) The composition of Claim 6 wherein the base includes one of sodium carbonate, sodium bicarbonate, trisodium phosphate, disodium hydrogen phosphate and tris(hydroxymethyl)-aminomethane.

9. (Original) The composition of Claim 1, comprising an agent reactive with acetaldehyde.

10. (Original) The composition of Claim 9, the reactive agent being selected from a group including lysine, arginine, thiamine, and pyridoxamine.

11. (Original) The composition of Claim 9 having a quantity of the reactive agent sufficient to provide an *in vivo* concentration of the reactive agent at least chemically equivalent to an amount of acetaldehyde resulting from the oxidation.

12. (Original) The composition of Claim 9, the reactive agent being a dehydrogenase.

13. (Original) The composition of Claim 12, the dehydrogenase comprising one of alcohol dehydrogenase and acetaldehyde dehydrogenase.

14. (Original) The composition of Claim 9 wherein the dehydrogenase has a concentration in the range 0.1 and 10 I. U./L.

15. (Original) The composition of Claim 1 including an accelerant.

16. (Original) The composition of Claim 15, the accelerant being selected from a group including adenosine 5'-triphosphate, adenine-9- $\beta$ -D-arabinofuranoside 5'-triphosphate, 2'-deoxyadenosine 5'-triphosphate, and 2',3'-dideoxyadenosine 5'-triphosphate.

17. (Original) The composition of Claim 15, the accelerant being selected from a group including fructose, arabinose, ribose, deoxyribose, and their phosphorylated derivatives.

18. (Original) The composition of Claim 15, having a quantity of the accelerant sufficient to provide an *in vivo* concentration in the range from 1% to 100% of a maximum *in vivo* molar concentration of ethanol.

19. (Original) The composition of Claim 1, including a charge-transfer agent.

20. (Original) The composition of Claim 19, the charge-transfer agent being selected from a group including an isoflavanone and a pyranoside thereof.

21. (Original) The composition of Claim 20, wherein the isoflavanoid is daidzein and its pyranoside is aloin.

*Sub*  
22. (Original) The composition of Claim 19, the charge-transfer agent being selected from a group including methoxatin, pyridoxine, pyridoxamine, pyridoxamine phosphate and thiamine.

23. (Original) The composition of Claim 19 having a quantity of the charge-transfer agent sufficient to provide an *in vivo* concentration of the charge-transfer agent in the range from 0.1% and 2% of a maximum *in vivo* molar concentration of ethanol.

*Sub*  
24. (Original) The composition of Claim 1, comprising a surfactant.

25. (Original) The composition of Claim 24, the surfactant being selected from a group including saponin, taurine, oleic acid and lecithin.

26. (Original) The composition of Claim 24, the concentration of the surfactant being in the range 0.02% and 0.2% by volume.

27. (Original) The composition of Claim 24, wherein the surfactant is also a charge-transfer agent.

*Sub*  
28. (Original) The composition of Claim 27, wherein the surfactant and charge-transfer agent is selected from a group including lipoic acid, retinoic acid, retinal, retinol, and derivatives and analogs thereof.

29. (Original) The composition of Claim 27, having a quantity of the surfactant and charge-transfer agent sufficient to provide an *in vivo* concentration of the surfactant and charge-transfer agent between 0.1% and 2% of a maximum molar concentration of ethanol.

*Sub*  
30. (Original) The composition of Claim 12, including a stabilizing ion.

31. (Original) The composition of Claim 30, the stabilizing ion being zinc.

32. (Original) The composition of Claim 31, the concentration of zinc ions being 1% the molar concentration of the dehydrogenase.

33. (Original) The composition of Claim 1, having also a dietary composition selected from a group including garlic oil, onion oil and dietary fiber.

*Sub*  
34. (Original) The composition of Claim 1, having also a medication.

35. (Original) The composition of Claim 34, the medication being a pain-relief agent selected from a group including aspirin, ibuprofen and acetomenaphin.

*Sup*  
36. (Original) The composition of Claim 1, being configured in a form selected from a group including a solution, suspension, capsule, gel caplet, transdermal patch, and nasal spray.

37. (Cancelled).

38. (Cancelled).

39. (Cancelled).

40. (Cancelled).

41. (Cancelled).

42. (New) A composition for accelerating *in vivo* oxidation of alcohol, the composition comprising  $\text{NAD}^+$  and one of vanadyl sulfate and a complex of vanadyl sulfate.

*B*  
43. (New) The composition of Claim 42, further comprising a species selected from the group consisting of a multivalent transition metal ion and a complex thereof, the transition metal being selected from a group including the elements of Groups IVa through VIII of the Periodic Table.

*A3*  
44. (New) The composition of Claim 43, the species comprising one of a group selected from: potassium ferricyanide; ammonium iron (III) citrate; ammonium molybdate; ammonium phospho molybdate; sodium tungstate; sodium phospho tungstate; ammonium manganese (III) sulfate; zirconium (IV) EDTA; niobium (IV) EDTA; tetrakis(tropolinato) niobium (V) chloride; tetrakis(tropolinato) tantalum (V) chloride; cobalt (III) hexamine chloride; and chromium (III) picolinate.

45. (New) The composition of Claim 42 having a sufficient quantity of the transition metal ion to provide an *in vivo* concentration of the ion in the range 0.05% to 2% of a maximum *in vivo* molar concentration of ethanol.

46. (New) The composition of Claim 42 having a quantity of  $\text{NAD}^+$  sufficient to provide an *in vivo* concentration of  $\text{NAD}^+$  in the range 0.05% to 5% of a maximum *in vivo* molar concentration of ethanol.

47. (New) The composition of Claim 42 comprising also a base.

48. (New) The composition of Claim 47, having a quantity of the base sufficient to provide an *in vivo* concentration of the base at least chemically equivalent to acid resulting from the oxidation of the ethanol.

Sub B1  
49. (New) The composition of Claim 47 wherein the base includes one of sodium carbonate, sodium bicarbonate, trisodium phosphate, disodium hydrogen phosphate and tris(hydroxymethyl)-aminomethane.

50. (New) The composition of Claim 42, comprising an agent reactive with acetaldehyde.

52. (New) The composition of Claim 50, the reactive agent being selected from a group including lysine, arginine, thiamine, and pyridoxamine.

53. (New) The composition of Claim 50 having a quantity of the reactive agent sufficient to provide an *in vivo* concentration of the reactive agent at least chemically equivalent to an amount of acetaldehyde resulting from the oxidation.

Sub B1  
54. (New) The composition of Claim 50, the reactive agent being a dehydrogenase.

55. (New) The composition of Claim 54, the dehydrogenase is acetaldehyde dehydrogenase.

As  
56. (New) The composition of Claim 54, wherein the dehydrogenase has a concentration in the range 0.1 and 10 I. U./L.

57. (New) The composition of Claim 42, further including an accelerant.

58. (New) The composition of Claim 57, the accelerant being selected from a group including adenosine 5'-triphosphate, adenine-9- $\beta$ -D-arabinofuranoside 5'-triphosphate, 2'-deoxyadenosine 5'-triphosphate, and 2',3'-dideoxyadenosine 5'-triphosphate.

59. (New) The composition of Claim 57, the accelerant being selected from a group including fructose, arabinose, ribose, deoxyribose, and their phosphorylated derivatives.

60. (New) The composition of Claim 57, having a quantity of the accelerant sufficient to provide an *in vivo* concentration in the range from 1% to 100% of a maximum *in vivo* molar concentration of ethanol.

61. (New) The composition of Claim 42, including a charge-transfer agent.

62. (New) The composition of Claim 61, the charge-transfer agent being selected from the group consisting of an isoflavanone and a pyranoside thereof.

63. (New) The composition of Claim 62, wherein the isoflavanoid is daidzein and the pyranoside thereof is aloin.

64. (New) The composition of Claim 61, the charge-transfer agent being selected from the group consisting of methoxatin, pyridoxine, pyridoxamine, pyridoxamine phosphate and thiamine.

65. (New) The composition of Claim 61 having a quantity of the charge-transfer agent sufficient to provide an *in vivo* concentration of the charge-transfer agent in the range from 0.1% and 2% of a maximum *in vivo* molar concentration of ethanol.

66. (New) The composition of Claim 42, further comprising a surfactant.

67. (New) The composition of Claim 66, the surfactant being selected from the group consisting of saponin, taurine, oleic acid and lecithin.

68. (New) The composition of Claim 66, the concentration of the surfactant being in the range 0.02% and 0.2% by volume.

69. (New) The composition of Claim 66, wherein the surfactant is also a charge-transfer agent.

70. (New) The composition of Claim 69, wherein the surfactant and charge-transfer agent is selected from the group consisting of lipoic acid, retinoic acid, retinal, retinol, and derivatives and analogs thereof.

71. (New) The composition of Claim 69, having a quantity of the surfactant and charge-transfer agent sufficient to provide an *in vivo* concentration of the surfactant and charge-transfer agent between 0.1% and 2% of a maximum molar concentration of ethanol.

72. (New) The composition of Claim 42, including a stabilizing ion.

73. (New) The composition of Claim 72, the stabilizing ion being zinc.

74. (New) The composition of Claim 73, the concentration of zinc ions being 1% the molar concentration of the dehydrogenase.

75. (New) The composition of Claim 42, further comprising a dietary composition selected from the group consisting of garlic oil, onion oil and dietary fiber.

76. (New) The composition of Claim 42, further comprising a medication.

77. (New) The composition of Claim 76, the medication being a pain-relief agent selected from the group consisting of aspirin, ibuprofen and acetomenaphin.

78. (New) The composition of Claim 42, being configured in a form selected from a group including a solution, a suspension, a capsule, a gel caplet, a transdermal patch and a nasal spray.

79. (New) A composition for accelerating *in vivo* oxidation of alcohol, the composition comprising  $\text{NAD}^+$  and one of acetaldehyde dehydrogenase and alcohol dehydrogenase.

80. (New) The composition of Claim 79, further comprising one of a multivalent transition metal ion and a complex thereof, the transition metal being selected from a group including the elements of Groups IVa through VIII of the Periodic Table.

81. (New) The composition of Claim 79, further comprising one of a multivalent transition metal ion and a complex thereof, selected from the group potassium ferricyanide; ammonium iron (III) citrate; ammonium molybdate; ammonium phospho molybdate; sodium tungstate; sodium phospho tungstate; ammonium manganese (III) sulfate; zirconium (IV EDTA); niobium (IV) EDTA; tetrakis(tropolinato) niobium (V) chloride; tetrakis(tropolinato) tantalum (V) chloride; cobalt (III) hexamine chloride; or chromium (III) picolinate.

82. (New) The composition of Claim 80 having a sufficient quantity of the transition metal ion to provide an *in vivo* concentration of the ion in the range 0.05% to 2% of a maximum *in vivo* molar concentration of ethanol.

83. (New) The composition of Claim 79 having a quantity of  $\text{NAD}^+$  sufficient to provide an *in vivo* concentration of  $\text{NAD}^+$  in the range 0.05% to 5% of a maximum *in vivo* molar concentration of ethanol.

84. (New) The composition of Claim 79 comprising also a base.

85. (New) The composition of Claim 84, having a quantity of the base sufficient to provide an *in vivo* concentration of the base at least chemically equivalent to acid resulting from the oxidation of the ethanol.

86. (New) The composition of Claim 84 wherein the base includes one of sodium carbonate, sodium bicarbonate, trisodium phosphate, disodium hydrogen phosphate and tris(hydroxymethyl)-aminomethane.

87. (New) The composition of Claim 79, comprising an agent reactive with acetaldehyde.

88. (New) The composition of Claim 87, the reactive agent being selected from a group including lysine, arginine, thiamine, and pyridoxamine.

89. (New) The composition of Claim 87 having a quantity of the reactive agent sufficient to provide an *in vivo* concentration of the reactive agent at least chemically equivalent to an amount of acetaldehyde resulting from the oxidation.

90. (New) The composition of Claim 79, wherein the dehydrogenase has a concentration in the range 0.1 and 10 I. U./L.

91. (New) The composition of Claim 79, further including an accelerant.

92. (New) The composition of Claim 91, the accelerant being selected from a group including adenosine 5'-triphosphate, adenine-9- $\beta$ -D-arabinofuranoside 5'-triphosphate, 2'-deoxyadenosine 5'-triphosphate, and 2',3'-dideoxyadenosine 5'-triphosphate.

93. (New) The composition of Claim 91, the accelerant being selected from a group including fructose, arabinose, ribose, deoxyribose, and their phosphorylated derivatives.

94. (New) The composition of Claim 91, having a quantity of the accelerant sufficient to provide an *in vivo* concentration in the range from 1% to 100% of a maximum *in vivo* molar concentration of ethanol.

95. (New) The composition of Claim 79, including a charge-transfer agent.

96. (New) The composition of Claim 95, the charge-transfer agent being selected from the group consisting of an isoflavanone and a pyranoside thereof.

97. (New) The composition of Claim 96, wherein the isoflavanone is daidzein and the pyranoside thereof is aloin.

98. (New) The composition of Claim 95, the charge-transfer agent being selected from the group consisting of methoxatin, pyridoxine, pyridoxamine, pyridoxamine phosphate and thiamine.

99. (New) The composition of Claim 95 having a quantity of the charge-transfer agent sufficient to provide an *in vivo* concentration of the charge-transfer



agent in the range from 0.1% and 2% of a maximum *in vivo* molar concentration of ethanol.

100. (New) The composition of Claim 79, further comprising a surfactant.

101. (New) The composition of Claim 100, the surfactant being selected from the group consisting of saponin, taurine, oleic acid and lecithin.

102. (New) The composition of Claim 100, the concentration of the surfactant being in the range 0.02% and 0.2% by volume.

103. (New) The composition of Claim 100, wherein the surfactant is also a charge-transfer agent.

104. (New) The composition of Claim 79, including a stabilizing ion.

105. (New) The composition of Claim 104, the stabilizing ion being zinc.

106. (New) The composition of Claim 105, the concentration of zinc ions being 1% the molar concentration of the dehydrogenase.

107. (New) The composition of Claim 79, further comprising a dietary composition selected from the group consisting of garlic oil, onion oil and dietary fiber.

108. (New) The composition of Claim 79, further comprising a medication.

109. (New) The composition of Claim 79, the medication being a pain-relief agent selected from the group consisting of aspirin, ibuprofen and acetomenaphin.

110. (New) The composition of Claim 79, being configured in a form selected from a group including a solution, a suspension, a capsule, a gel caplet, a transdermal patch and a nasal spray.